Appl. No. : 10/074,633
Filed : February 11, 2002

AMENDMENTS TO THE CLAIMS

Please cancel Claims 2, 3, and 19-35, without prejudice; amend Claims 1 and 4, without prejudice, and add new Claims 36-37, as follows:

1. (Currently amended) A deposition method comprising:

providing a substrate disposed within a chamber, wherein the substrate comprises a first surface having a first surface morphology and a second surface having a second surface morphology different from the first surface morphology, the first surface morphology being single crystalline and the second surface morphology being amorphous, polycrystalline or a mixture of amorphous and crystalline material;

introducing trisilane to the chamber under chemical vapor deposition conditions; and

depositing a Si-containing film onto the substrate over both of the first surface and the second surface.

2. (Canceled).

3. (Canceled).

4. (Currently amended) The deposition method of Claim [[2,]] 1, further comprising introducing a germanium source to the chamber simultaneously with the trisilane, thereby depositing a SiGe film as the Si-containing film.

5. (Original) The deposition method of Claim 4, wherein the SiGe film comprises from about 0.1 atomic % to about 80 atomic % germanium.

6. (Original) The deposition method of Claim 1, wherein the first surface comprises a semiconductor material and the second surface comprises a dielectric material.

7. (Original) The deposition method of Claim 6, wherein the semiconductor material comprises silicon and a dopant selected from the group consisting of arsenic, boron, indium, phosphorous, and antimony.

8. (Original) The deposition method of Claim 6, wherein the dielectric material comprises a material selected from the group consisting of silicon dioxide, silicon nitride, metal oxide and metal silicate.

9. (Original) The deposition method of Claim 1, wherein the Si-containing film is a silicon buffer layer having a thickness of about 500 Å or less.

10. (Original) The deposition method of Claim 9, further comprising introducing a germanium source and a silicon source to the chamber to thereby deposit a SiGe film onto the buffer layer.

11. (Original) The deposition method of Claim 10, wherein the silicon source comprises trisilane.

12. (Original) The deposition method of Claim 1, wherein at least a portion of the first surface is non-coplanar with at least a portion of the second surface.

13. (Original) The deposition method of Claim 12, wherein the Si-containing film has a first thickness T_1 over the first surface and a second thickness T_2 over the second surface such that T_1:T_2 is in the range of about 10:1 to about 1:10.

14. (Original) The deposition method of Claim 13, wherein the chemical vapor deposition conditions comprise a temperature in the range of about 400°C to about 750°C.

15. (Original) The deposition method of Claim 13, wherein the Si-containing film has a first thickness T_1 over the first surface and a second thickness T_2 over the second surface such that T_1:T_2 is in the range of about 2:1 to about 1:2.

16. (Original) The deposition method of Claim 15, wherein the Si-containing film has a first thickness T_1 over the first surface and a second thickness T_2 over the second surface such that T_1:T_2 is in the range of about 1.3:1 to about 1:1.3.

17. (Original) The deposition method of Claim 1, further comprising introducing a dopant precursor to the chamber, thereby depositing an in situ doped Si-containing film as the Si-containing film.

18. (Original) The deposition method of Claim 1, wherein the Si-containing film comprises a crystalline morphology over the first surface and a non-crystalline morphology over the second surface.

Claims 19-35 (Canceled)

36. (New) A deposition method comprising:

providing a substrate disposed within a chamber, wherein the substrate comprises a first surface having a single crystalline morphology and a second surface having a surface morphology different from the single crystalline morphology;

introducing trisilane and a germanium source to the chamber under chemical vapor deposition conditions; and

depositing a SiGe film onto the substrate over both of the first surface and the second surface.

37. (New) The deposition method of Claim 36, wherein the SiGe film comprises from about 0.1 atomic % to about 80 atomic % germanium